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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,054	01/10/2001	Gabor Kalman	050-99-050	1934

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EXAMINER

LAXTON, GARY L

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 03/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,054

Applicant(s)

KALMAN ET AL.

Examiner

Gary L. Laxton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 18, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 11, 15-17 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-8 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-8 and 14 are repeated with 112 2nd paragraph issues, please correct.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 9, 10, 12-14, 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al.

Richardson et al disclose a motor control apparatus and method is disclosed for controlling a multiphase AC motor by controlling electrical quantities such as voltage or current applied to the stator of the motor. The apparatus includes a motor command unit for defining a reference signal indicative of a desired motor parameter such as torque, speed, or position, a DC voltage link, a controller, a line-side converter including active switches in a bridge configuration for

controlling the bidirectional flow of electrical power between the DC voltage link and a source of AC power, and a motor-side converter including active switches in a bridge configuration for controlling stator electrical quantities by controlling the bidirectional flow of electrical power between the DC voltage link and the motor, where the motor-side converter includes control means responsive to the reference signal for controlling the active switches to produce stator electrical quantities that correspond to the reference signal.

However, Richardson et al do not disclose operating the source side inverter in current mode and the drive side inverter in commutation mode.

Both control methods are well known in the art and would have been obvious choices for methods of control. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize current mode control on the source side inverter and commutation mode on the drive side inverter in order to control a multiphase AC motor.

5. Claims 1-5, 9, 10, 12-14, 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al.

Ma et al disclose a multi-motor drive in which the resonance existing between one or more output filter capacitors of a current source inverter and an a.c. induction motor is reduced. The inverter features a switching pattern generator which controls the power switches of the inverter based on a reference current. A control loop, connected to the switching pattern generator, measures the load current or voltage and generates a nominal reference current based on an error therein; determines a damping current based on the voltage at the terminal; and determines the reference current supplied to the switching pattern generator by subtracting the damping current

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from the nominal reference current. The invention essentially simulates the use of a physical damping resistor connected in parallel with each output filter capacitor, but without the corresponding energy loss. This form of active damping control is also applied to a resonance mode existing between the input filter capacitors of a PWM-based rectifier and the system inductance of a power source.

However, Ma et al do not disclose operating the source side inverter in current mode and the drive side inverter in commutation mode.

Both control methods are well known in the art and would have been obvious choices for methods of control. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize current mode control on the source side inverter and commutation mode on the drive side inverter in order to control a multiphase AC motor.

6. Claims 1-5, 9, 10, 12-14, 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spee et al.

Spee et al disclose a variable speed, constant frequency (VSCF) system utilizes a doubly-fed machine (DFM) to maximize the output power of the system. The system includes a power converter that provides a frequency signal and a current signal to the DFM. The power converter is controlled by an adaptive controller. The controller signals the converter to vary its frequency signal and thereby the rotor speed of the DFM until a maximum power output is sensed. The controller also signals the converter to vary its current signal and thereby the portions of power carried by the respective windings until a maximum power output is sensed. The control can be

augmented to not only maximize power and efficiency, but also provide for harmonic and reactive power compensation.

However, Ma et al do not disclose operating the source side inverter in current mode and the drive side inverter in commutation mode.

Both control methods are well known in the art and would have been obvious choices for methods of control. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize current mode control on the source side inverter and commutation mode on the drive side inverter in order to control a multiphase AC motor.

Allowable Subject Matter

7. Claims 11, 15-17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (703) 305-7039. The examiner can normally be reached on 5-4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7724 for regular communications and (703) 305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Edward H. Tso
Primary Examiner